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H. E. HOWLAND

1,889,049

SINGLE TRIGGER MECHANISM FOR DOUBLE BARRELLED FIREARMS

Filed Nov. 30, 1931

2 Sheets-Sheet 1

Fig. 1.

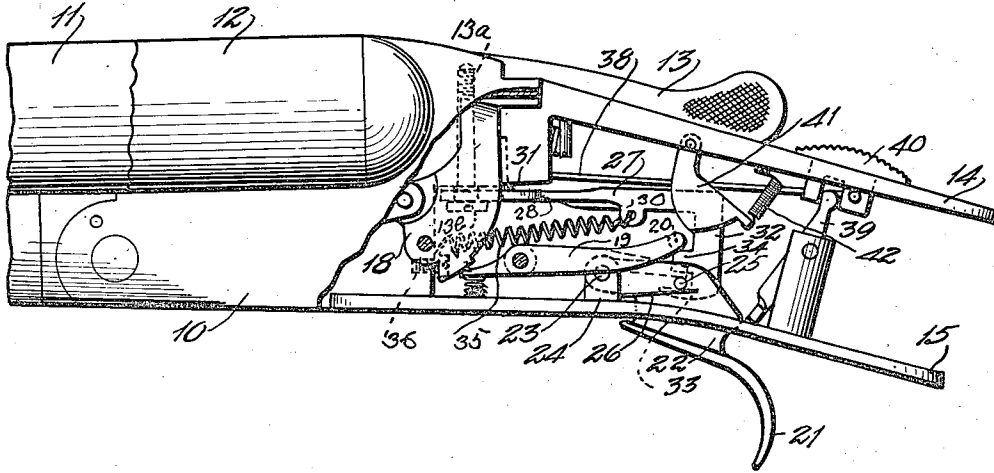


Fig. 2.

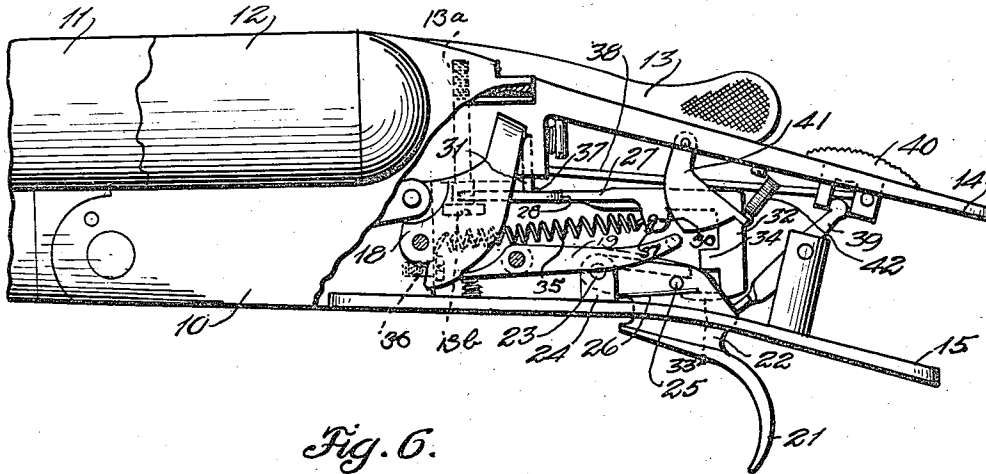
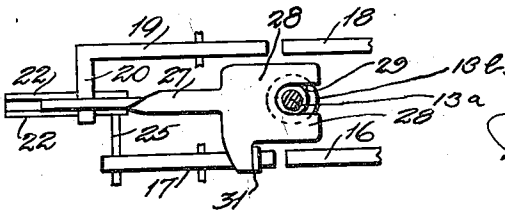


Fig. 6.



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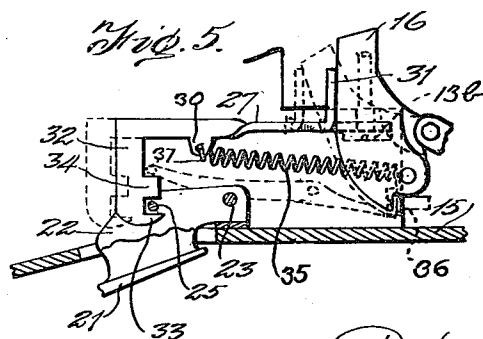
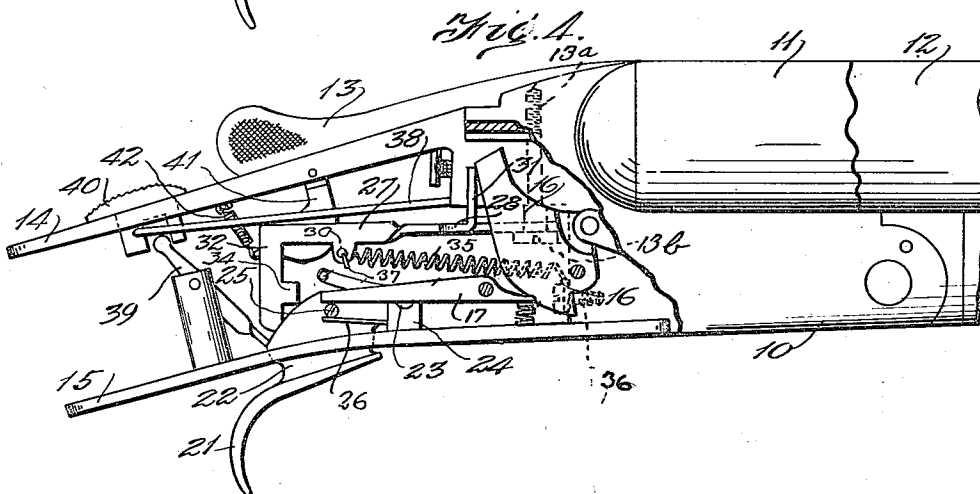
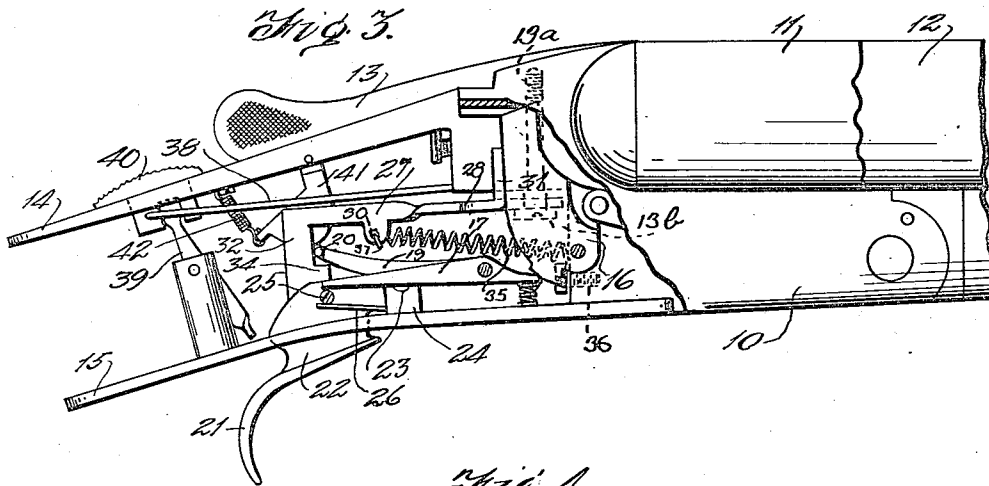
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SINGLE TRIGGER MECHANISM FOR DOUBLE BARRELLED FIREARMS

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2 Sheets-Sheet 2



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SINGLE-TRIGGER MECHANISM FOR DOUBLE-BARRELLED FIREARMS

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This invention relates to certain new and useful improvements in single trigger mechanism for double-barrelled firearms.

The primary object of the invention is to provide single trigger mechanism for double-barrelled firearms, preferably of the break-down shot gun type, the trigger mechanism being non-selective and firing from right to left, although it is to be understood that the firing mechanism associated with each barrel may be so designed as to cause the firing to be from left to right.

A further object of the invention is to provide a firearm of the foregoing character wherein separate firing mechanisms for the two barrels are operated by a single trigger and embodying devices for rendering one firing mechanism operative when the gun is broken down to cock the firing mechanism.

Another object of the invention is to provide single trigger mechanism for double-barrelled firearms embodying firing mechanism for each barrel including a hammer engaged sear with a tensioned inertia piece movable into engagement with the sear of the inactive firing mechanism during operation of the other firing mechanism to prevent accidental simultaneous operation of both firing mechanisms.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings:—

Figure 1 is a fragmentary left side elevational view of the double-barrelled firearm with the side walls of the frame removed to illustrate firing mechanism with the apparatus in fired position;

Figure 2 is a left side fragmentary elevational view, similar to Figure 1 with the firing mechanism in cocked position;

Figure 3 is a right side fragmentary elevational view with the mechanism in fired position;

Figure 4 is a right side fragmentary elevational view with the firing mechanism in

cocked position;

Figure 5 is a detail sectional view showing the tensioned slide operated by one of the hammers and the slide member in position to connect the single trigger with the sear of the firing mechanism for the other barrel, the slide member and handle being illustrated by dotted lines in cocked position; and

Figure 6 is a diagrammatic top plan view showing the slide member, the hammers and sears associated therewith and the single trigger.

Briefly described, this invention embodies a double-barrelled firearm with firing mechanism for each barrel and a single trigger device for the operation of the two firing mechanisms with a slide member operated by the hammer of one firing mechanism to be shifted against spring tension thereon to a position whereby the other firing mechanism is rendered inoperative relative to the single trigger device, the operation of the hammer engaged with the slide member permitting restoration of the slide member to its original position whereby inter-engagement of the trigger device with the other firing mechanism is accomplished. The firing of the two barrels is non-selective and is herein illustrated as firing from right to left, there being provided an inertia piece that is recoil operated upon firing of the right barrel to prevent accidental operation of the firing mechanism for the left barrel. While the double-barrelled gun is illustrated as firing from right to left, it is to be understood that the firing mechanism for each barrel may be so designed as to cause the gun to fire from left to right.

Referring more in detail to the accompanying drawings, there is illustrated a single trigger mechanism for double-barrelled firearms of the break down type and in which the reference numeral 10 designates the gun frame that houses the firing mechanism and pivotally supports in the usual manner, the right and left barrels 11 and 12 respectively, the breaking of the gun and the cocking of the firing mechanisms being accomplished by the usual top lever 13 pivotally supported

on the spindle 13a. The frame includes upper and lower tangs 14 and 15 respectively between which the firing mechanisms are housed.

5 The firing mechanism for the right barrel 11 includes a pivoted hammer 16 with which a tensioned sear 17 is engageable and the firing mechanism for the left barrel 12 includes a pivoted hammer 18 engaged by the tensioned sear 19 that carries upon its rear end a lateral finger 20 directed toward the sear 17 as diagrammatically illustrated in Figure 6. A single trigger 21 has a plate portion 22 of double wall construction movable through an opening in the bottom tang 15 with the forward ends of the plate portions 22 that are spaced from each other pivotally mounted as at 23 on a pin carried by a pair of upstanding ears 24 rising from the bottom tang. A pin 25 extending between the spaced plates 22 of the trigger intermediate the front and rear ends thereof projects at the right side of the trigger plate to be engaged by the trigger spring 26 for tensioning the trigger and positioning the pin 25 for engagement with the rear end of the sear 17, the trigger thereby being directly engageable with the sear 17 for the right hand barrel 11 and normally inoperative relative to the sear 19 of the firing mechanism for the left barrel 12.

To render the firing mechanism for the left barrel 12 operative, there is provided a slide member within the frame comprising a longitudinally slidable arm 27 carrying a plate portion 28 at its forward end that is bifurcated to provide an open ended slot 29 enclosing the shank of the spindle 13a for the top lever 13 and constituting a guide for the forward end of the slide member as illustrated in Figures 1 to 4. The lower end of the spindle 13a carries an enlarged head 13b overlapping the plate portion 28 at opposite sides of the slot 29 to maintain the slide arm in position. One side edge of the plate portion 28 adjacent the hammer 16 of the right hand barrel firing mechanism is struck out and bent upwardly to form a tongue 31 engageable by the hammer 16 as illustrated. The rear end of the arm 27 carries a depending leg 32 that is disposed between the spaced plates 22 of the trigger 21 that constitute a guide therefor, the forward edge of the leg 32 carrying a forwardly projecting lug 33 at its lower end and a forwardly directed lug 34 spaced upwardly of the lug 32. The slide member is normally tensioned in a forward direction by the spring 35 that is anchored at one end as at 36 to the frame 10 while the other end thereof is anchored as at 37 to the lug 30 depending from the slide member 27. The lateral finger 20 carried by the sear 19 is spaced forwardly of the depending leg 32 of the slide member and is in the path of movement of said leg as is also the pin 25.

The firearm is illustrated in fired position in Figures 1 and 3 and in cocked position in Figures 2 and 4. To cock the firing mechanisms, the stop lever 13 is operated for breaking the gun and during such movement, the tensioned links associated with the hammers 16 and 18 cause pivotal movement of said hammers during which movement the sears 17 and 19 are engaged with their respective hammers for holding them in cocked positions. During the cocking of the gun, the safety rod 38 is also operated for moving the safety lever 39 into engagement with the trigger plates 22 as shown in Figures 2 and 4 and also for the retraction of the safety slide 40. Cocking operation of the firing arm causes the hammer 16 to engage the tongue 31 upon the slide member for retracting the same against the tension of the spring 35 and said slide member is retained in retracted position by the hammer 16. Operation of the trigger 21, after the slide 40 has been operated to disengage the lever 39 from the trigger plate, permits the pin 25 upon the trigger plate to move the sear 17 for releasing the hammer 16, it being understood that when the slide member is in retracted position, the leg 32 thereof and also the lugs 33 and 34 are spaced from the pin 25. When the hammer 16 is released, the slide member is permitted to move forwardly under the influence of the spring 35 to the full line position shown in Figure 5, with the pin 25 disposed between the lugs 33 and 34 and with the lug 34 disposed beneath the lateral finger 20 upon the sear 19. Also, during firing operation of the mechanism associated with the right hand barrel 11, the inertia piece 41 pivotally suspended from the upper tang 40 and spring retracted as at 42 is swung forwardly by recoil due to the firing of the right barrel to a position to overlie the lateral finger 20 upon the sear 19 to prevent accidental firing of the firing mechanism associated with the left barrel, the spring 42 immediately retracting the inertia piece 41 after recoil to the position illustrated in Figures 1 to 4. The forward movement of the slide member moves the lower end of the leg 32 between the plates 22 of the trigger whereupon the pin 25 is disposed between the lugs 33 and 34 with the lug 34 disposed beneath the lateral finger 20 of the sear 19 so that upon the second operation of the trigger 21, the pin 25 connects the slide member to the trigger while the lug 24 upon the slide member operates the sear 19 for the release of the firing mechanism associated with the left barrel.

From the above detailed description of the invention, it is believed that the construction and operation thereof will at once be apparent and while there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood

that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

I claim:—

1. In double-barrelled firearms, having a separate firing mechanism for each barrel including a hammer and a sear, the combination with a single trigger operatively engaged with the sear of the first firing mechanism, and means forming communication between the trigger and the sear of the second firing mechanism and comprising a member movable into interlocking engagement with the trigger and sear after operation of the sear directly engaged by the trigger.

2. In firearms embodying separate firing mechanisms, a pendulous inertia piece normally spring retracted to inoperative position relative to one of the firing mechanisms and said inertia piece adapted to be swung to operative position relative to its associated firing mechanism by recoil resulting from operation of the other firing mechanism, said inertia piece comprising a block pivotally suspended on the upper wall of the firearm frame and movable over a sear of one firing mechanism.

3. In firearms embodying separate firing mechanisms, a pendulous inertia piece normally spring retracted to inoperative position relative to one of the firing mechanisms and said inertia piece adapted to be swung to operative position relative to its associated firing mechanism by recoil resulting from operation of the other firing mechanism, said inertia piece comprising a substantially triangular block having one corner pivotally suspended on the upper wall of the firearm frame and the retracting spring having one end attached to the upper frame wall and its other end attached to another corner of the block with one side of the block engageable with the firing mechanism.

4. In a double-barrelled firearm, the combination with a single trigger carrying a cross pin, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, with the trigger pin in constant operative relation to one sear, and means controlled in its operation by the hammer of the sear that is associated with the trigger pin for forming communication between the sear of the other firing mechanism and the trigger pin.

5. In a double-barrelled firearm, the combination with a single trigger carrying a cross pin, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, with the trigger pin in constant operative relation to one sear, and means independent of the sears controlled in its operation by the hammer of the sear that is associated with the trigger pin for forming communication between the sear of the other firing mechanism and the trigger pin.

6. In a double-barrelled firearm, the combination with a single trigger carrying a cross pin, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, with the trigger pin movable in a path traversed by one of the sears, and means controlled in its operation by the hammer of the sear that is associated with the trigger pin for forming communication between the sear of the other firing mechanism and the trigger pin.

7. In a double-barrelled firearm, the combination with a single trigger, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, means carried by the trigger in constant operative relation to one sear for the operation thereof and independent means controlled in its operation by the hammer of said one sear for forming communication between the sear of the other firing mechanism and the sear operating means carried by the trigger.

8. In a double-barrelled firearm, the combination with a single trigger, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, means carried by the trigger, immovable relative thereto and in constant operative relation to one sear for the operation thereof and independent means controlled in its operation by the hammer of said one sear for forming communication between the sear of the other firing mechanism and the sear operating means carried by the trigger.

9. In a double-barrelled firearm, a single trigger, a firing mechanism for each barrel, and a slide operated by the firing mechanism of one barrel for rendering the firing mechanism for the other barrel inoperative when both firing mechanisms are moved to cocked position and a pendulous inertia piece suspended from the top wall of the firearm frame and movable during recoil action into engagement with the sear of one of the firing mechanisms.

10. In a double-barrelled firearm, the combination with a single trigger, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, the trigger being directly engageable with the sear of the first firing mechanism, the sear of the second firing mechanism being normally inoperatively positioned relative to the trigger and means controlled in its action by operation of the hammer of the first firing mechanism for forming an interlocking connection between the trigger and sear of the second firing mechanism.

11. In a double-barrelled firearm, the combination with a single trigger, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, means carried by the trigger for the operation of the sear of the first firing mechanism, the sear of the second firing mechanism being located

out of the path of movement of the first sear operating means, and means rendered operable upon operation of the first firing mechanism to form an interlocking connection between the first sear operating means on the trigger and the second sear.

12. In a double-barrelled firearm, the combination with a single trigger, of a separate firing mechanism for each barrel including a hammer and a cooperating sear, means rigid with the trigger for forming communication between the sear of the first firing mechanism and the trigger, the trigger and said means movable in a zone out of operative relation to the sear of the second firing mechanism and means movable into the zone of movement of the means rigid with the trigger upon operation of the hammer of the first firing mechanism for the operation of the second firing mechanism.

In testimony whereof I affix my signature.
HARRY E. HOWLAND.

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